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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/820,702	03/30/2001	Kyoung Sub Kim	8733.308.00	5219

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EXAMINER

DUONG, THOI V

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/820,702

Applicant(s)

KIM, KYOUNG SUB

Examiner

Thoi V Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is in response to the Amendment filed October 29, 2003.

Accordingly, claims 1, 7, 8 and 11 were amended, and new claims 12-18 was added. Currently, claims 1-18 are pending in this application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (Fig. 2) in view of Plesinger (USPN 5,146,354) and Matsuda (USPN 5,929,950).

As shown in Fig. 2, Applicant's Prior Art discloses a liquid crystal display (LCD) device, comprising:

a liquid crystal panel 2;

a backlight assembly arranged with the main frame for radiating light onto the liquid crystal panel, comprising: a lamp (light source) 20, a lamp housing 18, and a light guide 6;

optical sheets 4 on the backlight assembly; and

a panel guide 12 provided between the backlight assembly and the liquid crystal panel to support the liquid crystal panel.

The LCD device further comprises:

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- a main frame 14 to which the backlight assembly is secured;
- a printed circuit board 8 installed under the main frame;
- a tape carrier package 22 mounted with drive integrated circuits for driving the liquid crystal panel and installed between the liquid crystal panel and the printed circuit board;
- a top case 16 for surrounding the upper edge of the liquid crystal panel and the side of the main frame; and
- a bottom case installed under the printed circuit board and having one side assembled in such a manner to overlap with the top case.

Applicant's Prior Art discloses a LCD device that is basically the same as that recited in claims 1 and 7 except for a pad provided between the panel guide and the backlight assembly and away from the light source forming a distance between the panel guide and the backlight assembly and thermally separating the liquid crystal panel and the optical sheets from the light source. As shown in Figs. 2 and 3, Plesinger discloses a LCD device comprising a pad 146 made of a heat insulating material and provided between a light guide 104 and a panel guide 118 (col. 4, lines 12-17)) for preventing heat from radiating from a lamp 100 to a liquid crystal panel 112 (col. 5, lines 5-13). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LCD device of Applicant's Prior Art with the teaching of Plesinger by forming a heat insulating pad provided between the panel guide and the backlight assembly for thermally separating the liquid crystal panel and the

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optical sheets from the light source so as to obtain a display system with uniform brightness of the viewing area (col. 2, lines 5-7).

With respect to claims 3 and 4, it is well known in the art that silicon or resin is used as an insulating layer (please see USPN 5,929,950 of Matsuda, col. 3, lines 35-39).

4. Claims 6 and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (Fig. 2) in view of Plesinger (USPN 5,146,354) and Matsuda (USPN 5,929,950) as applied to claims 1-5 and 7 and further in view of Kawano et al. (USPN 6,195,141 B1).

The LCD of Applicant's Prior Art (Fig. 2) as modified in view of Plesinger and Matsuda above includes all that is recited in claims 6 and 8-11 except that the second and third pads are not formed on both sides of the printed circuit board. As shown in Fig. 3, Kawano discloses a LCD device comprising a liquid crystal panel 7 and a printed circuit board 6 which is securely held between a lower cover 14 and an upper cover 17 through buffer members 20. Kawano teaches that the buffer members are made of elastic material to prevent shock impact from damaging the connection between the printed circuit board and the liquid crystal panel, and hence the contents of display can be surely display on the liquid crystal panel (col. 2, lines 19-28; col. 3, lines 41-44). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the LCD device of Applicant's Prior Art with the teaching of Kawano by forming a second silicon pad provided between the main frame and the printed circuit board to maintain a distance between the main

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frame and the printed circuit board and a third silicon pad provided between the printed circuit board and the bottom case to maintain a distance between the printed circuit board and the bottom case so as to secure the printed circuit board in place and also prevent shock from affecting display quality.

5. Claims 12-16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (Fig. 2) in view of Muramatsu et al. (USPN 5,703,665) and Matsuda (USPN 5,929,950).

As shown in Fig. 2, Applicant's Prior art discloses a liquid crystal display device, comprising:

- a liquid crystal panel 2;

- a backlight assembly for radiating a light onto the liquid crystal panel, said backlight assembly having a light source 20;

- optical sheets 4 on the backlight assembly; and

- a panel guide 12 provided between the backlight assembly and the liquid crystal panel to support the liquid crystal panel,

The liquid crystal display device further comprises:

- a main frame 14 to which the backlight assembly is secured;

- a printed circuit board 8 installed under the main frame;

- a tape carrier package mounted with drive intergrated circuits 22 for driving the liquid crystal panel and installed between the liquid crystal panel and the printed circuit board;

- a top case 16 for surrounding the upper edge of the liquid crystal panel and the side of the main frame; and

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a bottom case 10 installed under the printed circuit board and having one side assembled in such a manner to overlap with the top case,

wherein a distance between the panel guide and the backlight assembly is approximately 0.4 mm.

Applicant's Prior Art discloses a liquid crystal display device that is basically the same as that recited in claims 12-16 and 18 except for a pad provided between the panel guide and the backlight assembly. As shown in Figs. 7 and 8, Muramatsu et al. discloses a liquid crystal display device comprising a liquid crystal panel 10, a pad 45 provided between a light guide (below the liquid crystal panel) and a panel guide 100 having a depression 101a therein for receiving the pad for protecting the liquid crystal display panel from external forces (col. 1, lines 47-51 and col. 2, lines 57-63), wherein the pad is made of elastic material (col. 2, lines 29-32) and is not adjacent to a light source. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display of Applicant's Prior Art with the teaching of Muramatsu et al. by forming a pad between the panel guide and the backlight assembly to protect the liquid crystal display panel from external forces, and hence to obtain a quality display.

With respect to claims 13 and 14, it is well known in the art that silicon or resin is used as elastic material (please see USPN 5,929,950 of Matsuda, col. 3, lines 35-39).

6. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (Fig. 2) in view of Muramatsu et al. (USPN 5,703,665) and

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Matsuda (USPN 5,929,950) as applied to claims 12-15 and 18 and further in view of Kawano et al. (USPN 6,195,141 B1).

The LCD of Applicant's Prior Art (Fig. 2) as modified in view of Plesinger above includes all that is recited in claim 17 except that the second and third pads are not formed on both sides of the printed circuit board. As shown in Fig. 3, Kawano discloses a LCD device comprising a liquid crystal panel 7 and a printed circuit board 6 which is securely held between a lower cover 14 and an upper cover 17 through buffer members 20. Kawano teaches that the buffer members are made of elastic material to prevent shock impact from damaging the connection between the printed circuit board and the liquid crystal panel, and hence the contents of display can be surely display on the liquid crystal panel (col. 2, lines 19-28; col. 3, lines 41-44). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the LCD device of Applicant's Prior Art with the teaching of Kawano by forming a second silicon pad provided between the main frame and the printed circuit board to maintain a distance between the main frame and the printed circuit board and a third silicon pad provided between the printed circuit board and the bottom case to maintain a distance between the printed circuit board and the bottom case so as to secure the printed circuit board in place and also prevent shock from affecting display quality.

Response to Arguments

7. Applicant's arguments filed October 29, 2003 have been fully considered but they are not persuasive.

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With respect to claims 1-11, Applicant argued that Plesinger does not teach or suggest a pad provided between the panel guide and the backlight assembly; instead, the pad 146 is provided between the metal frame 118 and the heat fin member 144 and directly above the lamp 100 as shown in Fig. 3. The Examiner disagrees with Applicant's remarks because Plesinger discloses that the metal frame 118 is used for enframing the LCD panel (col. 4, lines 29-33), thus it is served as a panel guide to support the liquid crystal panel, and as clearly shown in Fig. 3, the pad 146 is formed away from the lamp 100 (or not directly on the lamp) between the panel guide 118 and the backlight assembly including the lamp 100 and the light guide 104. Finally, the reference of Plesinger is employed for teaching a heat insulating layer which is used to reduce heat transfer from the light source of the LCD panel and hence, to provide uniformity of brightness of the LCD panel (col. 2, lines 5-7); thus, this heat insulating layer is surely applicable to Applicant's Prior Art (Fig. 2) for obtaining a uniform display brightness.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory

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action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (571) 272-2293.

Thoi Duong



01/24/2004



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